

Claims

1. A method for the identification of a textile parameter from a soiled textile article in need of
5 treatment, characterised in that the method comprises:

- illuminating the surface of a soiled textile article with electromagnetic radiation comprising a spectral range suitable to create sample spectral data for subsequent comparison

10 - collecting sample spectral data from the surface of the textile article, and

- identifying the textile parameter by comparing said sample set of spectral data to reference spectral data obtained from reference textile material.

15 whereby said sample set of spectral data comprises a spectral range with a width of at least 400 nm and the spectral range comprises the wavelength range of from 783 nm to 1183 nm.

2. A method according to claim 1 wherein the spectral band comprises the wavelength range of from 369 to 1183 nm.

20 3. A method according to claim 1 wherein the spectral band comprises the wavelength range of from 369 to 1672 nm.

4. A method according to claim 1 wherein the comparison is by means of a calibration model
25 using multivariate analysis.

5. A method according to claim 4 wherein said multivariate analysis is selected from Principal Component Analysis (PCA), Discriminant Analysis (DA), Partial Least Squares Regression (PLS), Principal Component Regression (PCR), and Multilinear Regression Analysis (MLR)
30 and preferably a combination of Principal Component Analysis (PCA) and Discriminant Analysis (DA).

6. A method according to claim 1 wherein the textile parameter comprises at least one of the group consisting of stain type, dye type and mixtures thereof.

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7. A method according to claim 1 wherein the textile parameter is the stain type and the reference spectral data comprises at least one set of spectral data representing stain types selected from proteinacious, lipid, bleachable, particulate soil and starch stains.

5 8. A method according to claim 1 wherein the textile parameter is the dye type and the reference spectral data comprises at least one set of spectral data representing dye types selected from direct dyes, vat dyes, reactive dyes, acid dyes, basic dyes, pigment dyes, metal complex dyes, mordants, disperse dyes, sulphur dyes and mixtures thereof.

10 9. A method according to claim 6 wherein in addition to the stain type and/or dye type, the textile parameter comprises the fibre type and the reference spectral data comprises at least one set of spectral data representing fibre types selected from natural fibres and man made fibres cotton and mixtures thereof, preferably the fibres are selected from wool, silk, cotton, hemp, polyester, nylon, lycra, polyamide, viscose, elastan, viocel, leather and mixtures
15 thereof.

10. A method according to claim 6 wherein in addition to the stain type and/or dye type the textile parameter comprises the colour and the reference spectral data comprises at least one set of spectral data representing colour selected from white, red, pink, yellow, orange, blue,
20 green, purple, brown, black and mixtures thereof.

11. A method of treating a soiled textile article comprising the steps of
- identifying a textile parameter of said textile article according to any one of the preceding claims and
25 - choosing a treatment parameter based on the parameter identified in the previous step.
- treating the laundry article with a treatment regimen comprising the treatment parameter chosen in the previous step.

12. A method according to claim 11 wherein the treatment parameter comprises at least one
30 of the group selected from the treatment type, amount and type of treatment agent, treatment temperature and treatment period.

13. A method according to claim 12 wherein the treatment type is selected from cleaning, conditioning, drying and mixtures thereof.

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14. A method according to claim 12 wherein the treatment agent is selected from water, dry cleaning solvent, surfactants, builders, enzymes, bleach activators, bleach catalysts, bleach boosters, bleaches, alkalinity sources, antibacterial agents, colorants, perfumes, pro-perfumes, finishing aids, lime soap dispersants, composition malodour control agents, odour neutralisers, polymeric dye transfer inhibiting agents, crystal growth inhibitors, photobleaches, heavy metal ion sequestrants, anti-tarnishing agents, anti-microbial agents, anti-oxidants, anti-redeposition agents, soil release polymers, electrolytes, pH modifiers, thickeners, abrasives, divalent or trivalent ions, metal ion salts, enzyme stabilisers, corrosion inhibitors, diamines or polyamines and/or their alkoxylates, suds stabilising polymers, process aids, fabric softening agents, optical brighteners, hydrotropes, suds or foam suppressors, suds or foam boosters, anti-static agents, dye fixatives, dye abrasion inhibitors, wrinkle reduction agents, wrinkle resistance agents, soil repellency agents, sunscreen agents, anti-fade agents, and mixtures thereof.
15. An apparatus for the identification of a textile parameter from a soiled textile article comprising: (a) source means for illuminating the surface of a soiled textile article with electromagnetic radiation comprising a spectral range suitable to create spectral data comprising the wavelength range of from 783 nm to 1183 nm for subsequent comparison; (b) photo-detector means for collecting sample spectral data from the surface of the textile article in less than 8 seconds; (c) computer means for identifying the textile parameter by comparing said sample set of spectral data to reference spectral data obtained from reference textile material.